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be possible to obtain sufficient income, in connection with rentals of lecture halls, etc., to pay the operating expenses of the building, thus entirely relieving the societies from any charges for their rooms, as, under our charter, the property will be exempt from taxation. The large auditorium is calculated to seat one thousand persons, and is approached by ample hallways directly from the street. The main feature of the second floor is a large parlor or club room, extending across the whole front of the building, which is intended to be a place of general rendezvous and social intercourse for the members of the societies. On this floor, however, there is also an assembly room which is to be for the common use of the societies for meetings that may be larger than can be accommodated in their separate apartments. When not so used it is to be available for public rental. On the second, third and fourth floors twelve society rooms and four laboratories are provided. Eight of the former will be assigned to the societies now included in the Alliance, and four will be reserved for societies that may be admitted hereafter. In the meantime they may be rented. The fifth floor is lighted largely from the roof and is devoted exclusively to the library and reading rooms, with double-tiered stacks for about 200,000 books.

It is not necessary to go into a minute description of these plans, as the drawings submitted herewith exhibit plainly the details, which have all been worked out with much care. We believe that every essential requirement has been met as fully as the limits of space will permit, and we are so well satisfied with the plans as a whole that we recommend that they be reproduced in suitable form for distribution to the members of the Alliance, and also that a considerable number be sent out to the public, accompanied by appropriate text, in the hope that interest may be awakened in the

enterprise we have in hand, and with faith that the paper may come under the notice of some generous citizen who will be induced to at least inaugurate a movement for the happy realization of what is now but an earnest desire on our part.

The general financial improvement of which we have spoken not only has continued, but has gathered force during the past year, so that now many good judges of business matters confidently look forward to a period of substantial prosperity. If their anticipations are well founded we may have before us the great opportunity for which we have long waited, to place before the public-spirited citizens of New York, with success, an appeal for the establishment of science upon a firm and enduring basis in this enlarged and aspiring metropolis. We feel confident that the time has come to put forth an earnest effort in this direction and trust that the Council will confirm our purpose and reinforce our endeavor by all the means that can be properly invoked for the cause.

#### ZOOLOGICAL NOTES.

DR. ALFRED SCHAPER has an interesting paper on 'The Influence of the Central Nervous System upon the Development of the Embryo' in the *Journal* of the Boston Society of Medical Sciences for January 18th. The animals experimented upon were the larvæ of frogs, and the aim of the experiment was to remove the entire central nervous system, or certain parts of it, by excision in very young larvæ where the neural tube had just closed, and then to try to keep the larvæ alive, observing the results of the operation on the course of development. The dorso-frontal portion of the head was cut off with a sharp lancet, removing in successful cases the entire brain, with the medulla, the anlage of the eyes, the olfactory and auditory organs.

Some of the larvæ lived, and developed

for seven days, their organs, other than those operated on, not only assuming their typical shape and correlative arrangement, but also undergoing typical histogenic differentiation. Dr. Schaper considers that his experiments corroborate the theories of Roux, who divides the development of an organism into an early period of organogenetic development and a later period of functional development. During the first period the organs develop by means of an inherited endogenous energy without influence from outer stimuli; during the second the gradually developed specific function of the individual organ, as well as the cooperative function of all the organs of the body, are the main stimuli for further growth. During this second period the absence of an important organ, and especially of the central nervous system, must be fatal and lead to the death of the organism.

Two investigators have recently used the Röntgen rays to very good purpose. The first of these, Professor H. C. Bumpus, was, by their aid, enabled to note accurately the number of vertebræ, and record the position of the pelvis in 100 specimens of *Necturus*. The other, Dr. W. C. Cannon, used the rays to obtain figures showing the changing shape of the stomach during digestion, using for the purpose a cat. The animal's food was mixed with subnitrate of bismuth and the wave-like movements of the pyloric portion of the stomach were made clearly visible. The total number of waves which passed over the antrum during the seven hours a cat was digesting a meal of soft bread was about 2,600.

Professor Bumpus's paper, alluded to above, can hardly be summarized, owing to the number of questions discussed and amount of evidence brought forward. It may, however, be said that in 36 out of 100 examples of *Necturus* the pelvis was abnormally attached, and that in 22 cases it was attached to the twentieth instead of the

nineteenth vertebra. Variations in the relative position of the pelvic arch are associated with variations in the position of the pectoral arch; the definitive location of the pelvis is probably due to centripetal influence derived from the budding appendage, and intercalation of vertebræ in the sense of the introduction of new segments does not take place. F. A. L.

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CURRENT NOTES ON PHYSIOGRAPHY.

THE MISSISSIPPI FLOOD OF 1897.

WEATHER BUREAU BULLETIN E, 'Floods of the Mississippi River,' by Park Morrill, is a report on an important subject concerning which most persons have only newspaper information. Forty-five quarto pages are given to a general account of the river, its flood plain and some of its earlier floods. Thirty pages describe the spring flood of 1897. Many charts represent the normal monthly precipitation of the region, certain cases of exceptional precipitation, and records of hydrographs during floods at various stations. Among the most interesting plates is one (based on the Mississippi River Commission map) representing the flooded area of 1897 and its relation to the 'alluvial valley' or flood plain of the lower Mississippi. The manner in which the flood avoided the higher ground along the river and selected the back swamps at one or the other side of the flood plain is very clearly brought out. As is well known, the great river follows near the eastern bluffs as far as Memphis, then swings across to the western bluffs at Helena, and returns to the eastern bluffs at Vicksburg, remaining close to them as far as Baton Rouge. The flood began in the St. Francis basin, west of the river, in the Memphis section. It crossed the river near Helena, submerging the lower Yazoo basin, but leaving the upper Yazoo basin free. The flood again crossed the river near Vicksburg, submerging the lower Macon basin, but